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SAVE GRAIN BY DESTROYING

Rats!

U.S. DEPARTMENT OF AGRICULTURE
Office for Food and Feed Conservation
Cooperating with
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE



NEARLY all farms harbor some rats, which, last year, destroyed or damaged 200 million bushels of grain. Rats also are carriers of bubonic plague, typhus, and other deadly diseases.

The rat population can be quickly reduced, however, by using improved modern control methods.

Now is the time to put those control methods into effect.

Rat control is a five-fold job:

1. Do *not* shelter rats.
2. Do *not* feed rats.
3. Do kill rats regularly.
4. Do organize community rat-control projects.
5. Do follow a year-round program.

Do Not Shelter Rats

Rats cannot be eliminated if they have places to hide. Piles of rubbish, stacks of lumber or other material, and wooden floors close to the ground are favorite hiding places for rats. Many farms have several such hiding places close to granaries or other food supplies. Such a combination is a perfect "rat hotel." Do not let your farm become a "rat hotel." Remove rat shelters (rubbish piles), especially those near buildings.

Pile lumber and other material on racks at least a foot above ground. Replace wooden feeding floors with concrete, wherever possible. Otherwise, raise them a foot or more above ground, or prevent rats burrowing under them by surrounding with an underground barrier of concrete, sheet metal, or hardware cloth. Floors of chicken coops, hog houses, and other fowl and animal shelters should be similarly treated.

Do Not Feed Rats

A hungry rat is easily poisoned or trapped. Make food difficult for rats to find; store food and feeds properly, and keep scraps and garbage in ratproof containers.

All granaries, corncribs, apple cellars, and other storages should be ratproofed. Line granaries with metal whenever possible, or install concrete footings or projecting metal flashings above all foundations. Sacked feeds, especially high-protein feeds, should be stored away from walls on platforms a foot or more above the floor. Use sheet-metal coverings wherever rats attempt to enter a storehouse by gnawing, as at the corners or edges of doors.

Full directions for ratproofing buildings are given in U. S. D. I. Conservation Bulletin No. 19, Rat Proofing Buildings and Premises, obtainable from Superintendent of Documents, Washington 25, D. C., for 10 cents each.

Do Kill Rats Regularly

Rats that are hungry and lack shelter are easily killed by:

1. Poisoning.
2. Fumigating.
3. Trapping.

All these methods should be combined on nearly every rat-control job, with major emphasis on poisoning.

Caution.—All poisons should be handled with great care, should be kept away from livestock and children, and should be stored in plainly marked containers on high shelves away from edibles or feeds.

All poisons are only as effective as the bait with which they are mixed. *Use fresh bait*; bread crumbs, back fat, hamburger, and fish are good baits. If rats do not come to poisoned bait, remove all other food, and prebait with unpoisoned bait for 2 or 3 nights. Pick up uneaten bait each morning. Use the same bait, poisoned, when rats come regularly to baited places.

Red squill is the safest bait for use by the general public. ANTU is also good, but must be kept away from dogs and other domestic animals.

Stronger poisons, such as strychnine and zinc phosphide, may be used, but are dangerous to livestock and humans. Still more dangerous are thallium and compound TEN-EIGHTY. They must not be used, except by trained professional operators.

Red squill (powdered) should be mixed at the rate of 1 part squill to 9 parts bait. *Be sure to obtain squill with a guaranteed strength of at least "500 mg/kg."* Red squill is the safest of all rat poisons and is very effective when properly used.

ANTU should be used at the rate of 1 to 2 percent in bait. It is good for brown rats, but is not uniformly successful against black rats.

Many ready-mixed baits, using both squill and ANTU, are on the market, but few of them are as attractive to rats as fresh bait.

Fumigation with cyanide gas or gasoline exhaust fumes is effective where burrows or buildings can be tightly closed. **Fumigants are highly poisonous to humans and livestock; handle them with great care.** Calcium cyanide dust is applied with a special dusting pump. Directions are given in U. S. D. I. Circular No. 13, mentioned later. In using exhaust fumes from a tractor, car, or gas engine, run the motor about 10 minutes for each burrow, using a rich mixture. Before starting, plug up all other openings as well as around the one where the gas hose enters. After one day,

break up all burrows with a pick or shovel; later, re-treat burrows showing signs of renewed occupancy.

Common rat traps should be used where poison or fumigation cannot be used. Enlarge trigger surface of trap as much as possible with cardboard or hardware cloth. Place trap in runway where rats will cross the enlarged trigger. A properly placed trap needs no bait; bait does little good on an improperly placed trap, but if desired the same baits as for poisoning may be used.

Full directions for rat killing are given in U. S. D. I. Circular No. 13, Rat-Control Methods, obtainable at 10 cents each from the Superintendent of Documents, Washington 25, D. C.

Do Organize Communities

Community action is the only effective way to fight rats. Controlling rats on only one farm in a community is somewhat like trying to sweep back the ocean with a broom. Even if a farmer rids his premises of rats this fall, more will come in from surroundings where control is not practiced. Hence, community action should include not only farms, but feed mills and other food establishments in towns and villages.

Community action, pooling all resources, gives all the benefit of expert advice and may permit employment of a trained rat-control man. County agents can arrange community control projects in cooperation with district agents of the Fish and Wildlife Service. Similarly, community rat-control demonstrations may be arranged.

Cooperative community action is also the only practical way to obtain and utilize the services of a man trained and qualified to use compound TEN-EIGHTY on rat control. Groups may raise funds to obtain this service from a reputable pest-control operator, selected from lists of such operators that are obtainable from the Secretary of the National Pest Control Association, William O. Buettner, 3019 Fort Hamilton Parkway, Brooklyn 18, N. Y.

Also, community or county organizations may wish to obtain expert assistance with modern rat-

control methods, including TEN-EIGHTY, by writing to the district agent of the Fish and Wildlife Service, Department of the Interior. (See list below.) These district agents will, whenever possible, fill requests for giving rat-control demonstrations. Such agents can also assist community or county groups in organizing cooperative rat-control projects. Thus small subscriptions from many individuals can be used to pay a Government-trained expert to supervise rat control on each member's farm, using modern methods, including TEN-EIGHTY where suitable.

Important.—Compound TEN-EIGHTY is the most effective rat poison known, but it is much too dangerous for use by the general public. It can be obtained and used only by qualified Government employees and pest-control operators, who are trained in the safeguards necessary to its use and who carry adequate public liability insurance.

District agents of the Fish and Wildlife Service are listed below for those wishing to write them about organizing cooperative rat-control projects:

Arizona:	E. M. Mercer, 201 New P. O. Bldg., Phoenix.
California:	W. E. Riter, P. O. Box 1317, Sacramento.
Central and Lake States:	G. C. Oderkirk, Experiment Station Annex, Purdue University, Lafayette, Ind.
Colorado:	Roy Fugate, 576 Custom House, Denver.
Dakotas-Nebraska:	A. S. Hamm, 6 P. O. Bldg., Mitchell, S. Dak.
Gulf States:	Robert B. Deen, P. O. Box 395, State College, Miss.
Idaho:	Leo S. Twitchell, P. O. Box 1998, Boise.
Montana:	Eugene F. Grand, P. O. Box 1251, Billings.
Nevada:	Malcolm N. Allison, P. O. Box 1510, Reno.
New Mexico:	Louis H. Laney, 401 Federal Bldg., Albuquerque.
Northeastern States:	Walter W. Dykstra, 1105 Blake Bldg., 59 Temple Place, Boston 11, Mass.
Oklahoma-Kansas:	A. E. Gray, 322 Federal Bldg., Oklahoma City 2.
Oregon:	G. H. Hansen, Room 110 Pioneer P. O. Bldg., 520 SW. Morrison St., Portland.
South Atlantic States:	L. C. Whitehead, P. O. Box 5577, Raleigh, N. C.
Texas:	C. R. Landon, 298 Federal Bldg., San Antonio 6.
Utah:	Owen W. Morris, 457 Federal Bldg., Salt Lake City 1.
Washington:	John Finley, 1823 Smith Tower Bldg., Seattle 4.
Wyoming:	Carl R. Regnier, P. O. Box 59, Casper.

Do Follow a Year-Round Program

Rats never take vacations. They may raise 6 or more litters per year with from 6 to 22 in a litter. Ignoring the death rate, the progeny from one pair of rats could exceed 350,000,000 in 3 years.

Hence rat control must be a continuous job. "Rat-control weeks" are entirely ineffective against the continuous activities of rats, unless they are followed by a year-round program of rat killing.

Once rat numbers are reduced in a community they can be kept down at little cost by "maintenance control." If regular control is neglected during the year, rats will rapidly increase, until they require another intensive and expensive rat-control week. Costs are decreased and losses of grain are minimized when each farmer, miller, and householder makes rat control a part of his regular chores.

